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Nuclear parity violation from Lattice QCD THORSTEN KURTH, Lawrence Berkeley National Laboratory and UC Berkeley, EVAN BERKOWITZ, Lawrence Livermore National Laboratory, ANDRE WALKER-LOUD, RAUL BRICENO, Thomas Jefferson National Accelerator Facility and College of William and Mary, SERGEY SYRITSYN, Brookhaven National Laboratory, MICHAEL BUCHOFF, University of Washington, MARK STROTHER, Lawrence Berkeley National Laboratory and UC Berkeley, ENRICO RINALDI, PAVLOS VRANAS, Lawrence Livermore National Laboratory, CALLAT COLLABORATION — The steady advancement of computing technology and algorithms now allows for the computation of basic low-energy hadronic and nuclear observables directly from the fundamental theory of strong interactions, using the numerical technique of lattice QCD. We are beginning to compute specific matrix elements which are necessary to interpret the results from significant experimental efforts designed to probe the limits of the Standard Model. In this talk, I will present preliminary results of the first lattice QCD calculation of parity violation in the di-proton system, as well as the P-wave scattering phase shift necessary to determine the former. Ultimately, this calculation will determine low-energy coefficients in the parity-violating two-nucleon Lagrangian as well as the Desplanques, Donoghue, and Holstein (DDH) model, which can be used to compare with the experimental results.

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